

WHAT IS CLAIMED IS:

1. A speech signal transmitting and receiving apparatus comprising

a speech signal transmitting encoding circuit for compressing speech signals by digital signal processing at a high efficiency,

noise domain detection means for detecting noise domains using analytic patterns produced by said speech signal transmitting encoding circuit, and

means for controlling the received sound volume responsive to the noise level detected by said noise domain detection means.

2. The speech signal transmitting and receiving apparatus as claimed in claim 1 wherein said noise domain detection means employs a first-order linear prediction encoding coefficient as the analytic parameter for each frame, said one frame being deemed to be a noise domain if the first-order linear prediction encoding coefficient is smaller than a pre-set threshold.

3. The speech signal transmitting and receiving apparatus as claimed in claim 2 wherein said noise domain detection means employs a pitch gain indicating the intensity of pitch components as the analytic parameter for each frame, said one frame being deemed to be a noise domain if the pitch gain is within a pre-set range.

4. The speech signal transmitting and receiving apparatus as claimed in claim 3 wherein said noise domain detection means

employs a pitch gain indicating the intensity of pitch components as the analytic parameter for each frame, said one frame being deemed to be a noise domain if the pitch gain is zero.

5. The speech signal transmitting and receiving apparatus as claimed in claim 4 wherein said noise domain detection means employs a frame power as the analytic parameter for each frame, said one frame being deemed to be a noise domain if the frame power for said one frame is smaller than a pre-set threshold.

6. The speech signal transmitting and receiving apparatus as claimed in claim 5 wherein, if an amount of change of the frame power between a current frame and a past frame exceeds a pre-set threshold, said noise domain detection means deems said current frame to be a speech domain, even if said current domain is a noise domain.

7. The speech signal transmitting and receiving apparatus as claimed in claim 6 wherein said noise domain detection means detects the noise detection domain in view of the value of the analytic parameters over plural consecutive frames.

8. The speech signal transmitting and receiving apparatus as claimed in claim 7 wherein said noise level detection means performs filtering on a noise level output of the noise domain detected by said noise domain detection means.

9. The speech signal transmitting and receiving apparatus as claimed in claim 8 wherein the filtering performed by said noise level detection means on the noise level output is minimum value

filtering.

Sub A3/ 10. The speech signal transmitting and receiving apparatus as claimed in claim 1 wherein said noise domain detection means employs a pitch gain indicating the intensity of pitch components as the analytic parameter for each frame, said one frame being deemed to be a noise domain if the pitch gain is within a pre-set range.

11. The speech signal transmitting and receiving apparatus as claimed in claim 1 wherein said noise domain detection means employs a pitch gain indicating the intensity of pitch components as the analytic parameter for each frame, said one frame being deemed to be a noise domain if the pitch gain is zero.

12. The speech signal transmitting and receiving apparatus as claimed in claim 1 wherein said noise domain detection means employs a frame power as the analytic parameter for each frame, said one frame being deemed to be a noise domain if the frame power for said one frame is smaller than a pre-set threshold.

Sub CA 13. The speech signal transmitting and receiving apparatus as claimed in claim 1 wherein, if an amount of change of the frame power between a current frame and a past frame exceeds a pre-set threshold, said noise domain detection means deems said current frame to be a speech domain, even if said current domain is a noise domain.

14. The speech signal transmitting and receiving apparatus as claimed in claim 1 wherein said noise domain detection means

detects the noise detection domain in view of the value of the analytic parameters over plural consecutive frames.

15. The speech signal transmitting and receiving apparatus as claimed in claim 1 wherein said noise domain detection means performs filtering on a noise level output of the noise domain detected by said noise domain detection means.

16. The speech signal transmitting and receiving apparatus as claimed in claim 1 wherein the filtering performed by said noise level detection means on the noise level output is minimum value filtering.

Sub 14 17. A speech signal transmitting receiving apparatus having a transmitter and a receiver, comprising noise level detection means for detecting a sound signal level entering a transmitting microphone as a noise level when there is no transmitting speech input at said transmitter, and control means for controlling the received sound volume responsive to the noise level detected by said noise level detection means.

18. The speech signal transmitting and receiving apparatus as claimed in claim 17 wherein said noise domain detection means detect the speech level entering said transmitting microphone of the transmitter directly after turning on of a power source for talk transmission.

19. The speech signal transmitting and receiving apparatus as claimed in claim 18 wherein said noise domain detection means detects the speech level entering said transmitting microphone

when the speech level in said receiver exceeds a pre-set value.

20. The speech signal transmitting and receiving apparatus as claimed in claim 17 wherein said noise level detection means detect the speech level entering said transmitting microphone at a pre-set time interval in the standby state of said transmitter for signal reception.

21. The speech signal transmitting and receiving apparatus as claimed in claim 21 wherein said noise domain detection means detect the speech level entering said transmitting microphone when the speech level in said receiver exceeds a pre-set value.

22. The speech signal transmitting and receiving apparatus as claimed in claim 17 wherein said noise domain detection means detect the speech level entering said transmitting microphone when the speech level in said receiver exceeds a pre-set value.